Panel Discussion: 2.00pm-4.30pm, Wed, May 4, 2016
Energizing Worldwide Oil and Gas Deepwater Developments

OTC-27317-MS
Introductions

Mike Beattie, Director
Anadarko Corporation

Jason Olson, Manager
(for Mike McEvilly)
HESS Corporation

Deanna Goodwin
President
Technip NA Region

Kassia Yanosek,
Associate Partner
McKinsey & Company

Sandeep Khurana, Sr. Manager
Granherne (KBR)

Martijn Dekker, VP
Shell Oil

Bruce Laws
President
Maersk Oil Houston
Presentation Format

Part I – Panel Layout & Premise
- About 5 minutes with Scene Setting (by Moderator)

Part II – Panelist Presentations
- About 50 minutes total (8 minutes presentation from each Panelists)

Part III – Audience Voting System
- Discussions & Q/A (85 minutes)

Part IV – Closing Statements
- Last 5 minutes - Closing remarks and Moderator Wrap-up
Deepwater Breakeven Price

- Past – “Buildup in cost”
- Present – “Project economics are challenged”
- Future – “Path to achieve deepwater supply growth”

Opportunities to Energize

- Supply Chain Efficiencies
- Common standard project design solutions
- Innovations in field developments
- Supplier alliances and new contractor offerings to the industry
- Re-configuring fiscal and regulatory terms with host governments
- New IOC Strategies
Disclaimer

Information provided in these presentations includes “forward-looking statements” as defined by the Securities and Exchange Commission. Forward-looking statements are identified as “forecasts, projections, estimates, plans, expectations, targets, etc.” and are subject to a variety of risk factors. Please refer to the risk factors contained in the public filings (including Securities and Exchange Commission filings) of each entity identified in this presentation for additional factors that could prevent the forward-looking statements from being realized.
Part II: Panelist Presentations
How do we get there?

- Breakeven
- Standardizations
- Innovation in Field Developments
- Early Engagement & Alliances
- Reconfiguring Fiscal Terms
- New IOC Strategies
Breakeven Overview

Kassia Yanosek
Associate Partner, McKinsey & Company
May 4, 2016
Relative to early 2000’s, capital project costs have escalated 2-3x on a like-for-like basis.

Development cost inflation for North Sea floating platform

Normalized cost

<table>
<thead>
<tr>
<th>Component</th>
<th>Actual cost Early 2000’s</th>
<th>Cost inflation adjusted to 2013</th>
<th>If designed in 2013 estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Topside</td>
<td>100</td>
<td>145</td>
<td>250</td>
</tr>
<tr>
<td>Sub-structure</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SURF</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drilling &amp; Wells</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operator costs</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

~70% of industry-wide capex escalation comes from drivers other than commodity price inflation.

SOURCE: McKinsey & Company
In today’s environment, capital is tightening and economics of near-FID projects are challenged, resulting in project deferrals.

Production from delayed greenfield projects

<table>
<thead>
<tr>
<th>Year</th>
<th>Mbd</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>0.2</td>
</tr>
<tr>
<td>2016</td>
<td>0</td>
</tr>
<tr>
<td>2017</td>
<td>0.2</td>
</tr>
<tr>
<td>2018</td>
<td>0.4</td>
</tr>
<tr>
<td>2019</td>
<td>0.8</td>
</tr>
<tr>
<td>2020</td>
<td>1.2</td>
</tr>
<tr>
<td>2025</td>
<td>4.0</td>
</tr>
</tbody>
</table>

Resource type breakdown of delayed production

- **Deepwater**: 58%
- **Oil sands**: 37%
- **Rest**: 5%

1 Includes shallow water and onshore conventional projects

SOURCE: McKinsey Energy Insights; Company filings; Press search
Despite potential scenarios for growth, activity reductions and questionable economics puts into question the role that DW will play.

2030 production, Mbd

- Mature field decline
- Potential offshore growth

<table>
<thead>
<tr>
<th>Category</th>
<th>2015 Production</th>
<th>Decline in Producing Assets</th>
<th>2030 Prod. from Existing Fields</th>
<th>New onshore</th>
<th>New shale/tight</th>
<th>New oil sands/extra heavy</th>
<th>New offshore</th>
<th>2030 Production</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other liquids and NGLs Sanctioned</td>
<td>95</td>
<td>-34</td>
<td>61</td>
<td>17</td>
<td>8</td>
<td>2</td>
<td>17</td>
<td>106</td>
</tr>
<tr>
<td>Not sanctioned</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Producing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SOURCE: McKinsey Energy Insights; Rystad Energy
US Gulf of Mexico breakeven costs have the potential to drop 35-40% from 2014 levels

Average US Gulf of Mexico greenfield breakeven costs in 2030

What is not included:
- Technology breakthroughs
- Changes to government take
- Efficiencies from industry-level collaboration

SOURCE: McKinsey Energy Insights
Standardizations

Mike Beattie

Director, Anadarko Corporation

May 4, 2016
Portfolio Development Cost Savings through Standardization

Standardization Benefits
• Safety and Environmental Performance
• Project schedules
• Development Cost
• Life cycle Costs

Systems for consideration
• Wellhead equipment
• Topsides Systems
• Production platforms
Key Benefits of Wellhead Equipment Standardization

- Safety
- Life Cycle Cost Optimization
- Product reliability
- On Time Delivery
- Installation performance excellence
  - Equipment standardization
  - Application of Lessons Learned
  - Continuous improvement
  - Process improvement
  - Technology Improvements
West Africa Project
Standard Kit Drives Cost Reductions

- Average Installation time reduced by 6 days per well on wells 7-16
- Estimated $6M savings per well gain in installation efficiencies in second stage of campaign
- $60M installation cost reduction over wells 7-16 on Jubilee
Standardization Benefits to Project Cycle

Schedule Improvement

Engineering

Equipment

Install/Comm.

Commercial

Global Design

Commercial

Design

Fabricate/Integrate

Global Design

Design

Fabricate/Integrate

Engineer.

Equipment

Install/Comm.

OTC2016

Offshore Technology Conference
Subsea System Components
Standardization Improves Cost and Schedule
Topsides Equipment Standardization

- Key components of process systems
- Control systems
- Regional spares inventory
- Operator familiarity
- Operational assurance
Benefits of Design One, Build Two

- Reduction in concept selection and FEED stage gate schedules
- Reduction in engineering resources
- Reduction in regulatory risk
- Schedule Confidence
  - Reduces the knock on effect when one contractor cannot finish their scope.
- Fabrication drives the schedule instead of engineering
- Much less “fire fighting” from the project team
  - Allows the team to focus on execution.
- Reduction in change
  - Engineering completed early has led to fewer revisions in the fabrication yard, which has led to more efficient execution.
Innovation in Field Developments

Jason Olson/ Mike McEvilley

Hess Corporation

May 4, 2016
### Current Industry Climate

#### Challenges
- Stark, “lower-for-longer” oil prices
  - $40 bbl price < $70 bbl cost to develop
- Increased project complexity and gov’t regulations (post Macondo); challenging regulatory regimes
- Industry culture shaped by years of significant investment and production growth

#### Strategies
- Delays and cancellations of Greenfield projects
- Hesitation to move new developments forward, which are increasing in complexity
- Reactive, uncontrolled or non-strategic cost cutting

#### The Reality – Growing Future Demand
- Increasing demand for energy outpaces current rate of supply
- By 2030, new Offshore production needs to increase by ~17 Mbd to meet demand

---

**We must refresh our strategies for the current market in order to meet future demands.**
Innovation...

At field and reservoir level to further improve cost structure through commercial innovations

- Technical Solutions
- Financing of Hubs by 3rd Party Hosts
- Operators Sharing Services
- Phasing Developments
- Increasing Reserve Size via Strategic Partnerships
Technical Solutions

Application of new technology and improving existing technology

• Projects with increased complexity or in areas with limited support infrastructure drive the need for application of new technologies
  • Ultra-Deep Water (6,500+ ft WD)
  • Challenging reservoir fluid properties (high pressure & temperature)
  • Tight rock formation, longer laterals
  • Significant reservoir complexity (compartmentalization, below salt, recovery mechanism)

• Improve efficiency / productivity with existing systems
  • E.g. Hess Equus Development Project is undergoing a design refresh/optimization to reduce weight and complexity while maintaining operational performance
Technical Solutions

Application of new technology and improving existing technology

• Projects with increased complexity or in areas with limited support infrastructure drive the need for application of new technologies
  • Ultra-Deep Water (6,500+ ft WD)
  • Challenging reservoir fluid properties (high pressure & temperature)
  • Tight rock formation, longer laterals
  • Significant reservoir complexity (compartmentalization, below salt, recovery mechanism)

• Improve efficiency / productivity with existing systems
  • E.g. Hess Equus Development Project is undergoing a design refresh/optimization to reduce weight and complexity while maintaining operational performance

Equus Semisubmersible: 50% weight reduction through elimination of MEG, improved driver selection, and topsides process optimization
Financing of Hubs by 3rd Party Hosts

“Hub-and-spoke” approach

- Allows for upside potential for project owners and Operators in the overall field development
- Improves cash flow - upfront capital requirements are deferred until after First Oil and Gas
  - Concept often applied to Floating Production Systems
  - Concept can be expanded to SURF systems

- Important considerations
  - Who operates the facility?
  - What KPIs need to be contractually agreed upon up front?
  - How to best utilize an integrated team during execution?
Financing of Hubs by 3rd Party Hosts

“Hub-and-spoke” approach

• Allows for upside potential for project owners and Operators in the overall field development
• Improves cash flow - upfront capital requirements are deferred until after First Oil and Gas
  • Concept often applied to Floating Production Systems
  • Concept can be expanded to SURF systems

Important considerations
• Who operates the facility?
• What KPIs need to be contractually agreed upon up front?
• How to best utilize an integrated team during execution?
Sharing Services

Synergies reduce cost and risk for parties at the field/basin

• Encourages strategic alignment between Operators, promoting additional collaboration opportunities

• Streamlines Service Supplier availability, eliminates schedule inefficiencies resulting in reduced wait/down times

• Service facilities/costs shared between Operator and Service Providers across the same geographic region
  • Rig Sharing with use of Rig Pools
  • Supply vessels, helicopters, and supply bases
  • Multi-purpose construction vessels
Phasing Developments
Breaking up big, complex projects into smaller components

- Limits work scopes to improve project manageability and better execution
- Facilitates flexibility in CAPEX and accelerated cash flow
- Enables strategic resource planning from Lessons Learned
- Protects against Subsurface and Price downside risks and uncertainties
Phasing Developments
Breaking up big, complex projects into smaller components

- Limits work scopes to improve project manageability and better execution
- Facilitates flexibility in CAPEX and accelerated cash flow
- Enables strategic resource planning from Lessons Learned
- Protects against Subsurface and Price downside risks and uncertainties
Increasing Reserve Access
Through Co-developments and Partnerships

• Stronger collaborations among Operators
  • Improving capital efficiency through jointly evaluating and planning developments of hubs
  • Partnering in efforts to explore and appraise leased areas
  • Optimized location for a centralized production facility

• Examples:
  • Independence Hub - Enterprise and Atwater Valley Producers Group (Anadarko, Dominion, Kerr-McGee, Spinnaker, Murphy and Devon Energy)
  • Keathley Canyon - BP, Chevron, and ConocoPhillips co-investment in Western GOM properties
  • Delta House Co-development – LLOG, Blackstone Energy Partners
Early Engagement & Alliances

Deanna Goodwin

President, Technip North America Region

May 4, 2016
The Value of Early Engagement

Rationalize overall field layout, drive standards, development and integration of technology

Source: FORSYS Subsea (An FMC Technologies and Technip Company)
Optimizing Cost- and Schedule-Driven Projects

- Design cost-effective project execution plans by engaging early
- **Integrated solutions** from design to development
- **Build optimized and fit-for-purpose solutions** working hand-in-hand with clients in a small, integrated project team
- **Combine** complementary assets, technologies and capabilities
Alliances, JVs, and Partnerships

With the right partner, Operators benefit.

- Integrated Value-add Offerings
- Reduced project cost
- Fewer Interfaces

WATCH OUTS
- Misaligned goals
- Cultural differences
Alliances and Partnerships to Increase Value-add and Lower Client Project Cost

Exclusive alliance with FMC Technologies

Partnership for pipeline welding

Integrated approach with sub-surface expertise with RPS Group
Contractor Strengths for a Challenging Environment

**Strengths**

- QHSE culture
- Early involvement and fully integrated approach
- Global business with worldwide footprint
- Talented Experienced Employees
- Technological Strength
Fiscal Terms

Bruce Laws
President, Maersk Oil Houston
May 4, 2016
Context

Oil prices have fallen 60%........as if we need a reminder

- How bad is it? $38/bbl in 2016 equates to ~$17/bbl in 1986 dollars
- IOC’s have slashed capital budgets – up to 80%
- Layoffs – thousands upon thousands
- But - improved efficiencies by IOC’s
  - Rig costs down and approaching rock bottom, drilling days/well improved – supply chain costs down
  - Production rates and efficiencies up – for example completion technology, seafloor multiphase pumping
- Wave of bankruptcies – more to come
- Lots of assets on the market - yet Bid/Ask spread prevents deals
  - Sellers can’t let go of ~$100 oil
  - Buyers can’t let go of the forward price curve ~$48 oil

‘The Future Ain’t What It Used To Be’
- Yogi Berra
Host Governments

Low prices have hit hard

– Budgets in severe deficit, import/export imbalances, currency devaluation, foreign currency reserves running low
– Trifecta of bad news for production levels:
  ➢ Natural decline of existing fields
  ➢ Poor exploration results – an industry trend
  ➢ 'Few new projects - capital constraints and poor economics
– Increasing burden to ordinary citizens – social instability risks increasing

Now competing for scarce IOC capital – a new and uncomfortable concept
Strategic Choices

‘Wait and Hope’
- Preferred – usually selected

‘Fiscal Flexibility’ – modify existing terms, ‘fair’ sharing of economic rent in current price environment
- Conceptually a ‘win-win’
  - Deliver production and cash flow to host government; deliver acceptable return to IOC
- Easy to propose - but tricky to execute
- Each country is unique – political will, inter-Ministerial misalignment and competition, patronage, individual career implications, unseen family/affiliation bonds

In the end.........

Until the pain of not changing is >>>> than the pain of changing, nothing changes
IOC Strategies

Martijn Dekker
Vice President, Shell
May 4, 2016
DEFINITIONS AND CAUTIONARY NOTE

The companies in which Royal Dutch Shell plc directly and indirectly owns investments are separate legal entities. In this presentation “Shell”, “Shell group” and “Royal Dutch Shell” are sometimes used for convenience where references are made to Royal Dutch Shell plc and its subsidiaries in general. Likewise, the words “we”, “us” and “our” are also used to refer to subsidiaries in general or to those who work for them. These expressions are also used where no useful purpose is served by identifying the particular company or companies. “Subsidiaries”, “Shell subsidiaries” and “Shell companies” as used in this presentation refer to companies over which Royal Dutch Shell plc either directly or indirectly has control. Entities and unincorporated arrangements over which Shell has joint control are generally referred to “joint ventures” and “joint operations” respectively. Entities over which Shell has significant influence but neither control nor joint control are referred to as “associates”. The term “Shell interest” is used for convenience to indicate the direct and/or indirect ownership interest held by Shell in a venture, partnership or company, after exclusion of all third-party interest.

This presentation contains forward-looking statements concerning the financial condition, results, operations and businesses of Royal Dutch Shell. All statements other than statements of historical fact are, or may be deemed to be, forward-looking statements. Forward-looking statements are statements of future expectations that are based on management’s current expectations and assumptions and involve known and unknown risks and uncertainties that could cause actual results, performance or events to differ materially from those expressed or implied in these statements. Forward-looking statements include, among other things, statements concerning the potential exposure of Royal Dutch Shell to market risks and statements expressing management’s expectations, beliefs, estimates, forecasts, projections and assumptions. These forward-looking statements are identified by their use of terms and phrases such as “anticipate”, “believe”, “could”, “estimate”, “expect”, “goals”, “intend”, “may”, “objectives”, “outlook”, “plan”, “probably”, “project”, “risks”, “schedule”, “seek”, “should”, “target”, “will” and similar terms and phrases. There are a number of factors that could affect the future operations of Royal Dutch Shell and could cause those results to differ materially from those expressed in the forward-looking statements included in this presentation, including (without limitation): (a) price fluctuations in crude oil and natural gas; (b) changes in demand for Shell’s products; (c) currency fluctuations; (d) drilling and production results; (e) reserves estimates; (f) loss of market share and industry competition; (g) environmental and physical risks; (h) risks associated with the identification of suitable potential acquisition properties and targets, and successful negotiation and completion of such transactions: (i) the risk of doing business in developing countries and countries subject to international sanctions; (j) legislative, fiscal and regulatory developments including regulatory measures addressing climate change; (k) economic and financial market conditions in various countries and regions; (l) political risks, including the risks of expropriation and renegotiation of the terms of contracts with governmental entities, delays or advancements in the approval of projects and delays in the reimbursement for shared costs; and (m) changes in trading conditions. All forward-looking statements contained in this presentation are expressly qualified in their entirety by the cautionary statements contained or referred to in this section. Readers should not place undue reliance on forward-looking statements. Additional risk factors that may affect future results are contained in Royal Dutch Shell’s 20-F for the year ended December 31, 2015 (available at www.shell.com/investor and www.sec.gov ). These risk factors also expressly qualify all forward looking statements contained in this presentation and should be considered by the reader. Each forward-looking statement speaks only as of the date of this presentation, May 4, 2016. Neither Royal Dutch Shell plc nor any of its subsidiaries undertake any obligation to publicly update or revise any forward-looking statement as a result of new information, future events or other information. In light of these risks, results could differ materially from those stated, implied or inferred from the forward-looking statements contained in this presentation.

We may have used certain terms, such as resources, in this presentation that United States Securities and Exchange Commission (SEC) strictly prohibits us from including in our filings with the SEC. U.S. Investors are urged to consider closely the disclosure in our Form 20-F, File No 1-32575, available on the SEC website www.sec.gov.
Rising energy demand, supply pressure, climate change

**Population**
- 9 billion people,
- 75% living in cities
- (2 billion more than today)

**Vehicles**
- 2 billion vehicles
- (currently 800 million)

**Rising standards**
- Many millions of people will rise out of energy poverty; with higher living standards energy use rises

**Demand**
- Energy demand could double from its level in 2000

**Efficiency**
- Twice as efficient, using half the energy to produce each dollar of wealth

**Renewables**
- 3 times more energy from renewable sources
DEEP-WATER OIL IS VITAL

270 billion barrels recoverable oil

7% of all conventional oil produced

~11 million barrels per day by 2040*

Source: *International Energy Agency (IEA)
DEEP WATER BUSINESS IS A KEY GROWTH OPPORTUNITY IN SHELL PORTFOLIO

Shell’s Deepwater Heartlands
- GOM Leading explorer & operator
- Nigeria Strong producer & resource potential
- Brazil Pre-salt development & Libra potential
- Malaysia Newest DW basin ramping-up
INVESTING ACROSS THE OIL PRICE CYCLE

Since 2000

<table>
<thead>
<tr>
<th>Year</th>
<th>2014</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price</td>
<td>+320%</td>
<td>+90%</td>
</tr>
<tr>
<td>Cost Index</td>
<td>+130%</td>
<td>+76%</td>
</tr>
</tbody>
</table>

Copyright of Shell
IMPROVE COMPETITIVENESS

- Supply Chain Transformation
- Competitive Scoping
- Efficient Execution
- Affordable Technology

Goal Zero | Capital Efficiency | Affordable Technology

IMPROVEMENT PROGRAMME

Copyright of Shell
CHANGING THE PARADIGM IN DEEP WATER

Progressive Oil & Gas Terms

Industry Collaboration

Focused Strategy
Reflections

Sandeep Khurana
Sr. Manager, Granherne (KBR)
May 4, 2016
### Part III- Audience Response System

- Question is Displayed on the Screen
- Question is read aloud
- System is activated
- Countdown clock appears on screen
- Press Button representing your choice
- Graph is Displayed
- Results are discussed
What is your occupational focus?

- 61% A. Technical
- 29% B. Financial
- 7% C. Public Policy
- 3% D. Media
Can greenfield deepwater reset to once again work at a $40 per barrel oil price?

A. Yes

B. No
Which area is most likely to yield the largest step change in breakeven price?

32%  A. Development Drilling
18%  B. Production Facilities (Hull; Topsides)
16%  C. Subsea
18%  D. Operator Expenditure (OPEX)
15%  E. Government Take
What kind of cost savings can be realized through standardization of equipment and design in developments?

- A. 10% 24%
- B. 20% 49%
- C. 40% 16%
- D. None – every development is unique 12%

Networking Event: Strategies for Decision-Making
Which deepwater technology and innovation is most likely to provide new production growth?

- **A. 20 Ksi developments** (28%)
- **B. New Facility Types to reduce cost** (16%)
- **C. Cost Effective Floating LNG** (22%)
- **D. Enhanced Oil Recovery (EOR)** (35%)
Which year do you think Brent crude oil price will reach $80 per barrel?

- A. 2017 (8%)
- B. 2018 (32%)
- C. Post 2018 (48%)
- D. Never (12%)
We are discussing four primary price scenarios with our clients

**Scenarios**

- **Fast Recovery**
  - Major supply disruptions due to political instability
  - Low oil prices drive demand growth in Asia and OECD that last multiple years

- **Slow Recovery**
  - OPEC production cut only after non-OPEC supply gets delayed
  - Short supply due to mega project delays, LTO slowdown, and mature asset declines
  - Dampened long-term demand growth due to energy efficiency and fuel substitution

- **Under-investment**
  - Under-investment in new projects during downcycle results in a tight market in the 2018-2019 period
  - Limited OPEC spare capacity to react to price volatility

- **Supply Abundance**
  - OPEC members continue to produce at max capacity
  - Technology disruption / large cost deflation drive down breakeven costs
  - Global GDP and oil demand growth decline due to energy efficiency or regulation

**SOURCE:** McKinsey Energy Insights
If Operator’s collaborated more effectively, how much more cost savings could be delivered?

31%  A. 10%

47%  B. 20%

22%  C. 40%
Are service sector alliances essential to development cost savings?

66.0%  A. Yes

34.0%  B. No
Will FID activity pick up in 2017?

A. Yes 59.6%
B. No 40.4%
Acknowledgements / Thank You